

IN THE CLAIMS:

All claims have been amended herein. Please note that all claims currently pending and under consideration in the referenced application are shown below. Please enter these claims as amended. This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A DRAM circuit comprising:
a substrate ~~having a an~~ having an active region thereon and a capacitor structure disposed above ~~said the~~ active region, ~~the said~~ capacitor structure including a storage node, a dielectric layer overlying ~~the said~~ storage node, and a conductive cell plate overlying ~~the said~~ dielectric layer, each of ~~the said~~ dielectric layer and ~~the said~~ conductive cell plate having an end portion proximate a conductive contact, ~~the said~~ conductive contact extending downward and adjacently beside ~~the said~~ capacitor structure, ~~the said~~ end portion of ~~the said~~ dielectric layer extending closer to ~~the said~~ conductive contact than ~~the said~~ end portion of ~~the said~~ conductive cell plate;
a first TEOS layer disposed proximate ~~the said~~ storage node;
a second TEOS layer disposed over ~~the said~~ capacitor structure and encasing ~~said the~~ end portions of ~~the said~~ dielectric layer and ~~the said~~ conductive cell plate, ~~said the~~ second TEOS layer disposed between ~~said the~~ capacitor structure and ~~said the~~ conductive contact; and
a doped BPSG layer disposed over ~~said the~~ second TEOS layer, ~~said the~~ conductive contact extending through ~~said the~~ BPSG layer and ~~said the~~ second TEOS layer.

Claims 2-3 (Canceled)

4. (Currently Amended) The DRAM circuit of claim 1, wherein each of ~~said the~~ storage node and ~~the said~~ conductive cell plate are heavily doped with dopants.

5. (Currently Amended) The DRAM circuit of claim 1, wherein each of ~~said~~the storage node and the ~~said~~ conductive cell plate comprise a phosphorous-doped polysilicon.

6. (Currently Amended) The DRAM circuit of claim 1, wherein the ~~said~~ dielectric layer comprises a capacitor cell dielectric layer.

7. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said~~the dielectric layer comprises a nitride layer.

8. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said~~the capacitor structure comprises a container-shaped capacitor.

9. (Currently Amended) The DRAM circuit of claim 1, wherein the ~~said~~ second TEOS layer is a dopant barrier between the ~~said~~ capacitor structure and said BPSG layer.

10. (Currently Amended) A semiconductor memory device comprising:
a semiconductor substrate having an active region thereon and a capacitor structure formed above the ~~said~~ active region, ~~said~~the capacitor structure including a first conductive layer, a second conductive layer, and a dielectric layer, the ~~said~~ dielectric layer disposed between ~~said~~the first and second conductive layers, each of ~~said~~the dielectric layer and the ~~said~~ first and second conductive layers having an end portion proximate a conductive contact, ~~said~~the conductive contact extending downward and adjacently beside ~~said~~the capacitor structure, ~~said~~the end portion of ~~said~~the dielectric layer extending closer to ~~said~~the conductive contact than ~~said~~the end portion of each of the ~~said~~ first conductive layer and ~~said~~the second conductive layer;
a diffusion barrier proximate the ~~said~~ first conducting layer and configured to prevent diffusion of contaminants into ~~said~~the active region;

a TEOS layer disposed over ~~said the~~ capacitor structure and encasing ~~said the~~ end portions of the ~~said~~-dielectric layer and each of ~~said the~~ first conductive layer and ~~said the~~ second conductive layer, ~~said the~~ TEOS layer disposed between ~~said the~~ capacitor structure and ~~said the~~ conductive contact; and
a doped BPSG layer disposed over ~~said the~~ TEOS layer, the ~~said~~-conductive contact extending through ~~said the~~ BPSG layer and ~~said the~~ TEOS layer.

Claims 11-12 (Canceled)

13. (Currently Amended) The device of claim 10, wherein ~~said the~~ conductive contact comprises at least one of metal and conductively doped polysilicon.

14. (Currently Amended) The device of claim 10, wherein ~~said the~~ conductive contact comprises a digit line.

15. (Currently Amended) The device of claim 10, wherein each of ~~said the~~ first conductive layer and ~~said the~~ second conductive layer are heavily doped with dopants.

16. (Currently Amended) The device of claim 10, wherein each of the ~~said~~-first conductive layer and ~~said the~~ second conductive layer comprise a phosphorous-doped polysilicon.

17. (Currently Amended) The device of claim 10, wherein ~~said the~~ dielectric layer comprises a capacitor cell dielectric layer.

18. (Currently Amended) The device of claim 10, wherein ~~said the~~ dielectric layer comprises a nitride layer.

19. (Currently Amended) The device of claim 10, wherein the ~~said~~-capacitor structure comprises a container-shaped capacitor.

20. (Currently Amended) The device of claim 10, wherein ~~said~~-the TEOS layer is a dopant barrier between the ~~said~~-capacitor structure and ~~said~~-the BPSG layer.

21. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said~~-the first TEOS layer is configured to prevent diffusion of contaminants into ~~said~~-the active regions.

22. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said~~-the first TEOS layer comprises a thickness of about 100 Å to about 250 Å.

23. (Currently Amended) The semiconductor memory device of claim 10, wherein ~~said~~ the diffusion barrier comprises a nitride layer or TEOS layer.

24. (Currently Amended) The semiconductor memory device of claim 10, wherein ~~said~~ the diffusion barrier comprises a thickness of about 100 Å to about 250 Å.